

PATENT COOPERATION TREATY

PCT/JP2004/004045



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H2070-01	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2004/004045	International filing date (day/month/year) 24 March 2004 (24.03.2004)	Priority date (day/month/year) 25 March 2003 (25.03.2003)
International Patent Classification (IPC) or national classification and IPC A61B 8/00		
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>3</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	

Date of submission of the demand 10 November 2004 (10.11.2004)	Date of completion of this report 09 June 2005 (09.06.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/004045

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages _____ 1-18 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ 2,6,7,8 _____, as originally filed/furnished
- pages* _____, as amended (together with any statement) under Article 19
- pages* _____ 1,9 _____ received by this Authority on 10 November 2004 (10.11.2004)
- pages* _____ 3,4,5 _____ received by this Authority on 02 May 2005 (02.05.2005)
- ☒ the drawings:
- pages _____ 1-5 _____, as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP04/004045

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-9	YES
	Claims		NO
Inventive step (IS)	Claims	4	YES
	Claims	1-3, 5-9	NO
Industrial applicability (IA)	Claims	1-9	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: Microfilm of the specification and drawings annexed to the written application of Japanese Utility Model Application No. 69188/1985 (Laid-open No. 172800/1989) (Fujitsu, Ltd.), 7 December, 1989 (07.12.89), full text, all drawings (Family: none)

Document 2: JP, 2001-54194, A (Olympus Optical Co., Ltd.), 23 February, 2001 (23.02.01), full text, all drawings (Family: none)

Document 3: JP, 2002-52024, A (GE Medical Systems Global Technology Co., LLC), 19 February, 2002 (19.02.02) (Family: none)

Document 4: JP, 1-291846, A (Aroka K.K.), 24 November, 1989 (24.11.89) (Family: none)

Document 5: JP, 11-347032, A (Matsushita Electric Industrial Co., Ltd.), 21 December, 1999 (21.12.99), full text, all drawings (Family: none)

Claims 1-3, 5-7 and 9

The subject matters of claims 1-3 and 5-9 do not appear to involve an inventive step in view of documents 1-4. Document 1 (particularly refer to Fig. 2) discloses the invention of an ultrasonic probe comprising a ground electrode 11 (this constitution corresponds to the sensor ground substrate) and a signal electrode 12 (this constitution corresponds to the sensor signal substrate), wherein the ground electrode is connected with a ground line via a third electrode (this constitution corresponds to the relay ground substrate). It is seen in Fig. 2 of document 1 that the signal electrode 12 is covered by the third electrode and the ground electrode. In addition, in the technical field of ultrasonic probes, using a substrate in drawing a cable out of an oscillator is a well-known technology (see Fig. 2 of document 2, for example), and also, using a flexible substrate in such drawing of a cable (see cited documents 3 and 4, for example) is well known.

Accordingly, it would be obvious to a person skilled in the art to apply the well-known technology of drawing out a cable using a flexible substrate, described in documents 3 and 4, etc., to drawing a cable out of the third electrode and the signal electrode described in document 1.

It would thus be obvious to a person skilled in the art that at least a portion of such flexible substrate that is connected with the signal electrode, and at least a portion of such connection part, are covered by the third electrode.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: V

Accordingly, a person skilled in the art could obviously have created the subjected matters of claims 1-3, 5-7 and 9 from the inventions described in documents 1-4.

The third electrode and the ground electrode constituted in an integrated manner in the invention described in document 1 would not be beyond the normal creative ability of a person skilled in the art. If the third electrode and the ground electrode are integrated with each other in the inventions derived from documents 1-4, the piezoelectric element, the signal electrode, and a portion of the flexible substrate used for drawing out a cable, are covered by the third electrode and the ground electrode in the resultant constitution.

Accordingly, a person skilled in the art could obviously have created the subject matter of claim 9 from the inventions described in documents 1-4.

Claim 4

The subject matter of claim 4 is not described in any of the documents cited in the ISR.

Claim 8

The subject matter of claim 8 does not appear to involve an inventive step in view of documents 1-5. It would be obvious to a person skilled in the art to apply the technology of channel division grooves to divide electrodes and oscillators, disclosed in document 5, to the inventions derived from documents 1-4 to create the subject matter of claim 8.